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February 27, 1996

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: PR Docket No. 92-257
Ex Parte Presentation

Dear Mr. Caton:

Earlier today, John Ballard, Chairman of TCI/BR Communications, John Goodman, Vice President, Applied Technology, TCI/BR Communications, Henry Goldberg, and Mary Dent met with Robert McNamara and Roger Noel to discuss issues relating to the above-referenced proceeding. BR/TCI distributed the attached presentation to the meeting participants.

Two copies of this letter and the attached presentation are hereby submitted for the public record in this proceeding, pursuant to 47 C.F.R. § 1.1206(a)(1).

If there are any questions in this regard, please contact the undersigned.

Sincerely,

Mary Dent

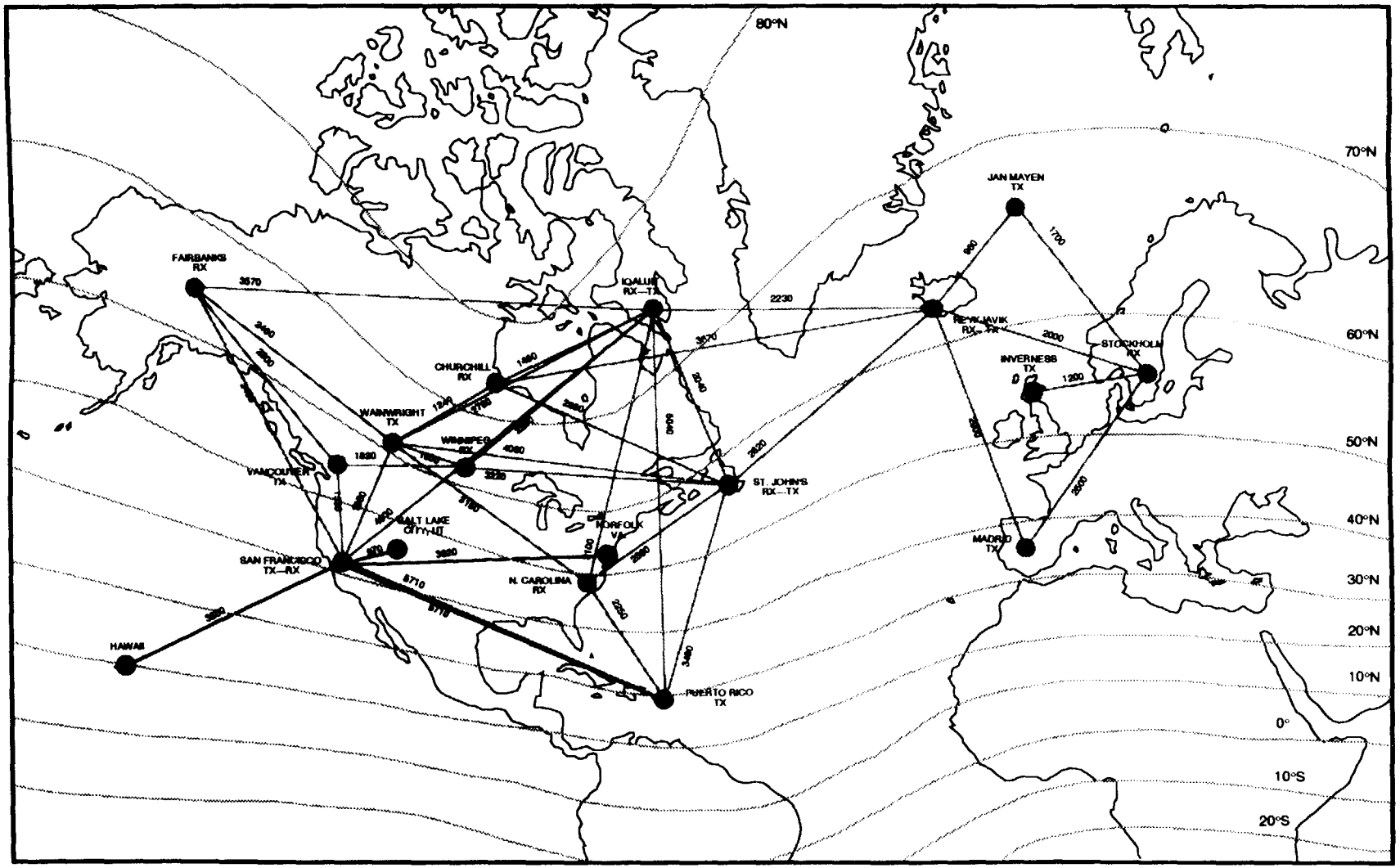
cc (without attachment): Robert McNamara
Roger Noel

Modern HF

How to Make HF as Reliable as Satellites

- The S. Mid-Latitude Experiment
  - ▶ Puerto Rico, Norfolk, Utah, Hawaii to Sunnyvale paths monitored using Chirpsounders for five months. MOF, LOF, Multipath, SNR in all Maritime and Aviation bands recorded
  - ▶ 100% availability
- The Northern Experiment
  - ▶ Twenty-nine Polar, Auroral, Trough, and N. Mid-Latitude paths monitored for one year. All ionospheric data (as above) down-loaded to Sunnyvale nightly
  - ▶ Air Canada, PTT Sweden, PTT Iceland active participants. Cooperation of U.S., Canadian, Icelandic, and Spanish Communication Entities

Color Map of Experiments



(DISTANCES IN KILOMETERS)

● MID-LATITUDE EXPERIMENT

● NORTHERN EXPERIMENT

TCI/BR

MID-LATITUDE AND NORTHERN EXPERIMENT

July 1995

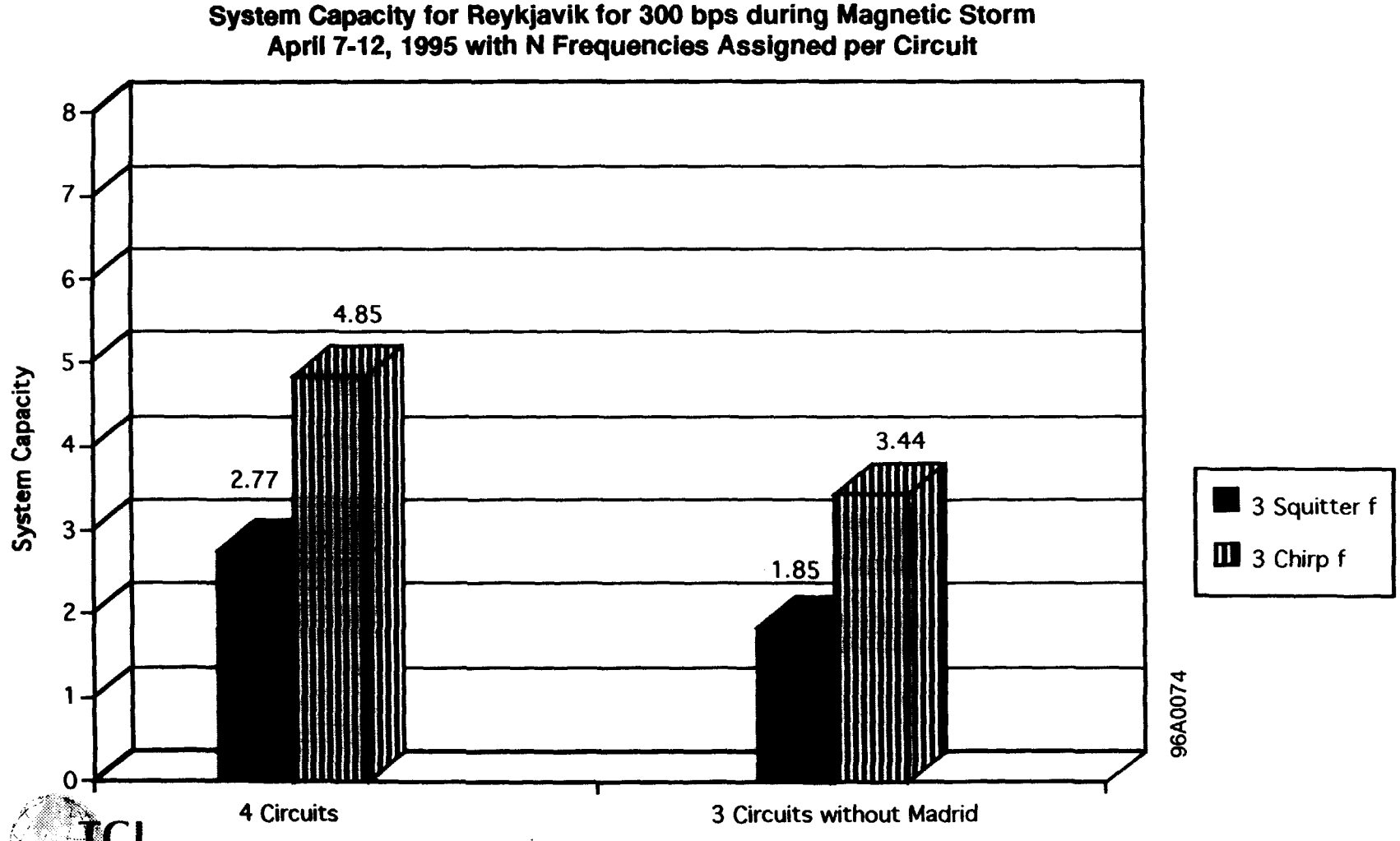
TCI Wireless

Long-Term Availabilities as a Function of Latitude

Region	Long-Term Availabilities	Represented By
Polar	99.2	Churchill
Auroral	99.5	Reykjavik
Trough	99.92	Tors Cove
N. Mid-Latitude	99.94	N. Carolina
S. Mid-Latitude	100%*	San Francisco
Overall for four N Sites	99.6	All except SFO
Four N Sites 1300-0500 LMT	99.993	All except SFO
Four N Sites 0500-1300 LMT	98.8	All except SFO

* (Five months of Data Only)

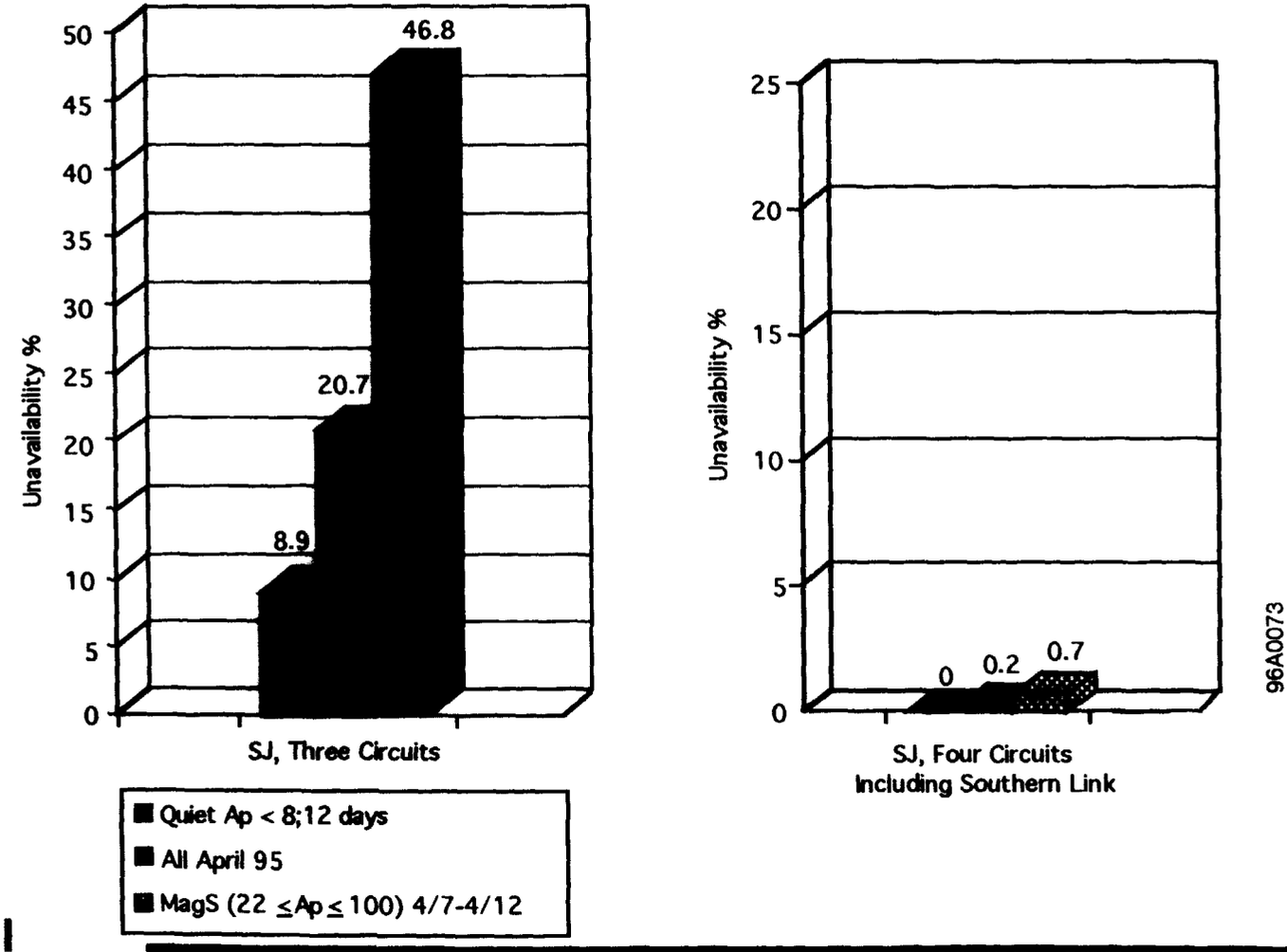
System Capacity Generally 2 Times Greater than with Any Prediction-Driven Scheme



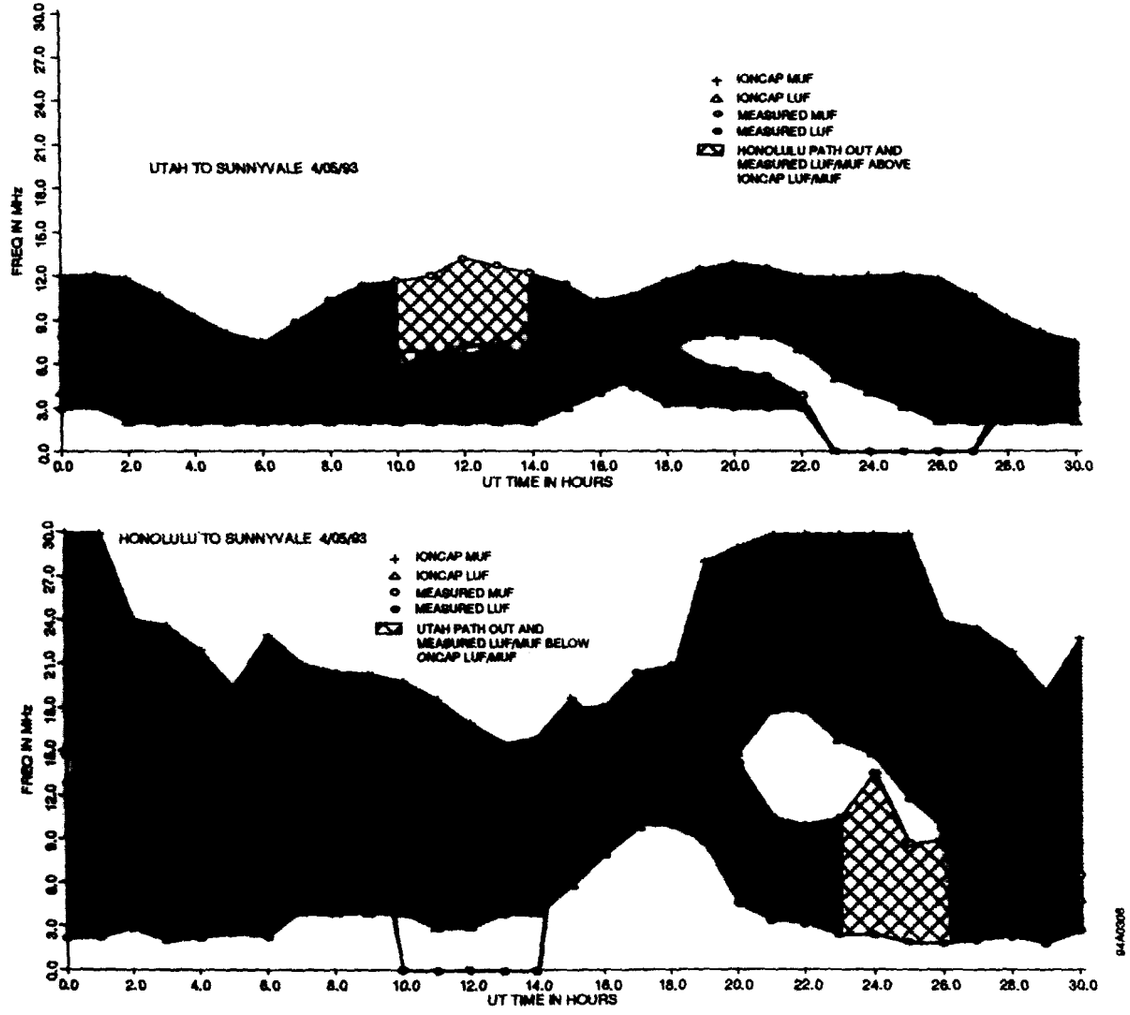
TCI Wireless

MM-323-96

Unavailability for 300 bps During April 1995, 11 Bands with Three or Four Circuits to St. John's, New Foundland vs. Magnetic Storm Conditions (Fourth Circuit is Puerto Rico–St. John's Showing of a Southern Link in Support of Northern Circuits)

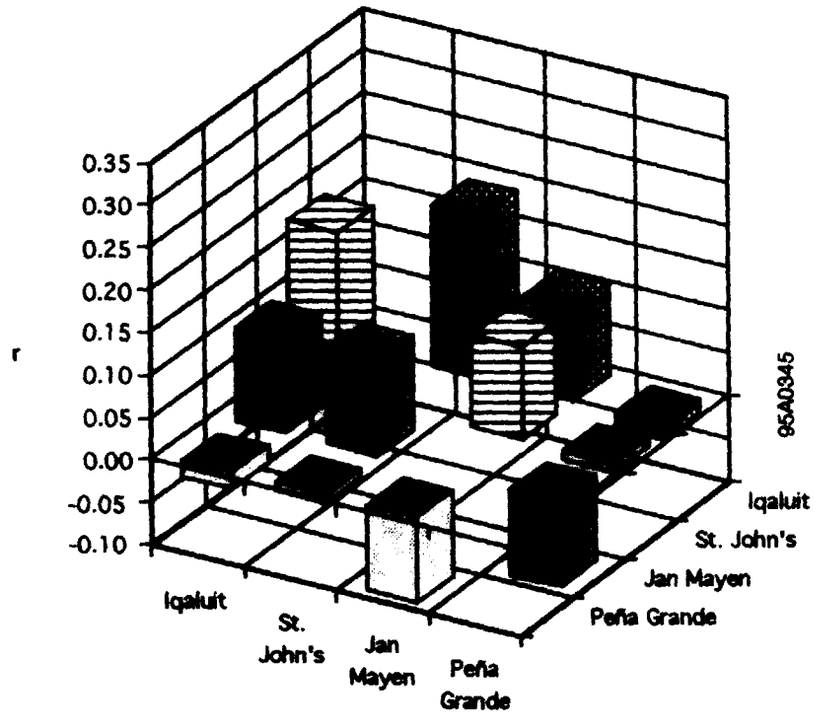


Physical Reasons for Success— Weak Correlation and Diversity

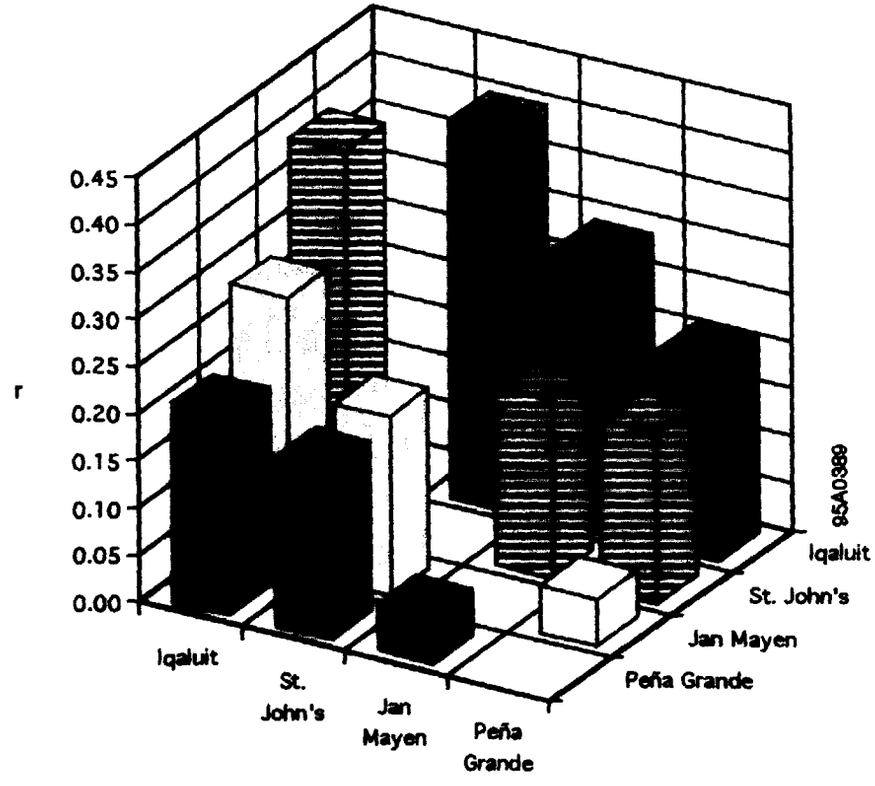


Correlation—Continued

Measured Correlation r between Site Pairs 11 Frequencies Iceland During Quiet Magnetic Conditions Ap < 8, April 1995



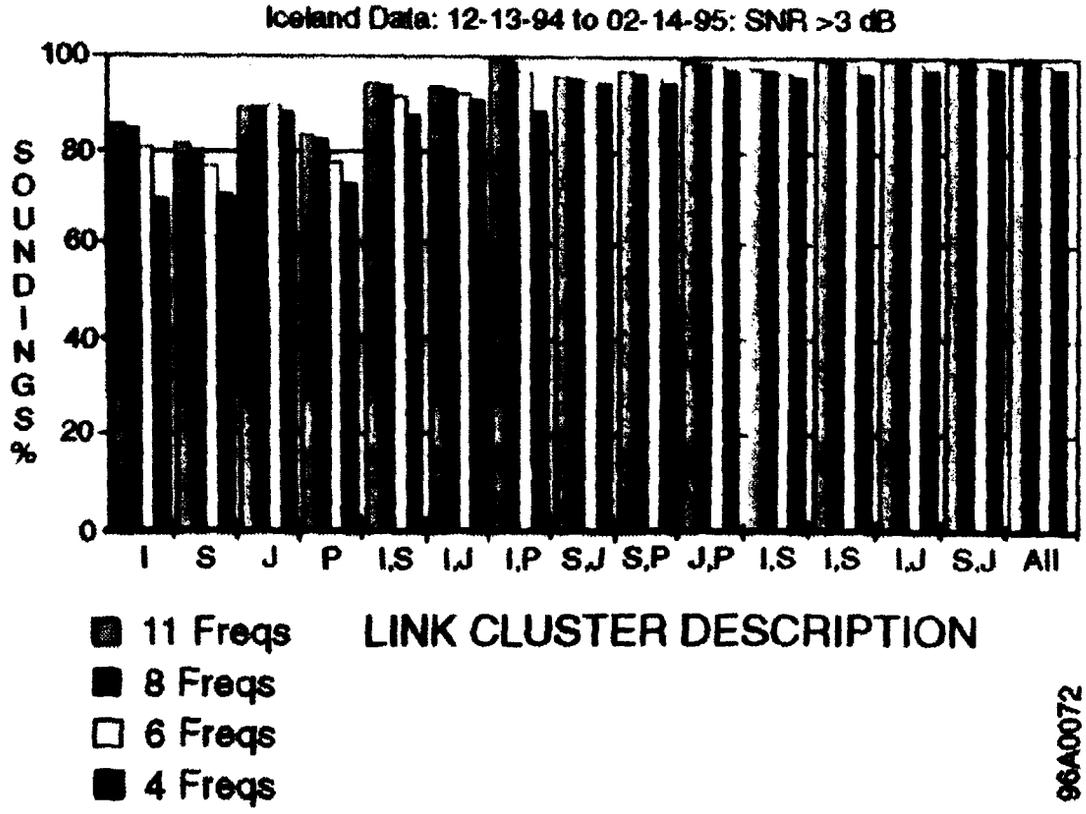
Measured Correlation r between Site Pairs 11 Frequencies Iceland During Magnetic Storm 7 thru 12 April 1995 (22 ≤ Ap ≤ 100)



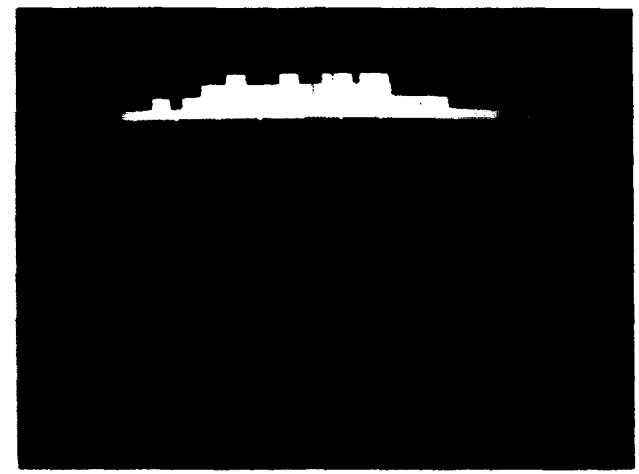
Importance of Spectrum and No. of Service Providers

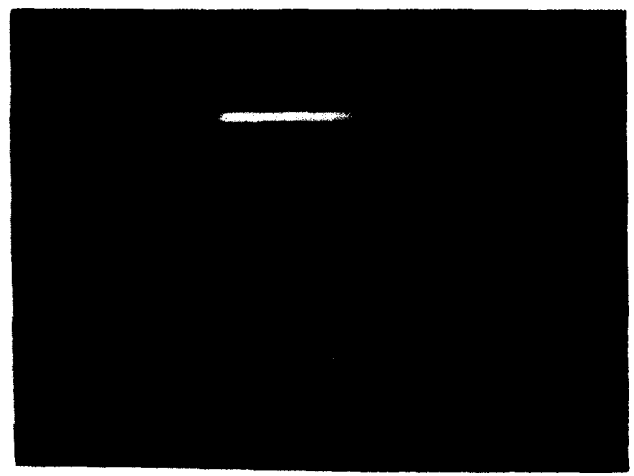
Data for the time period of 12-13-94 to 02-14-95.Receiver at Iceland and transmitters at Iqualuit (I), St. Johns (S), Jan Mayen (J), and Pena Grande (P).

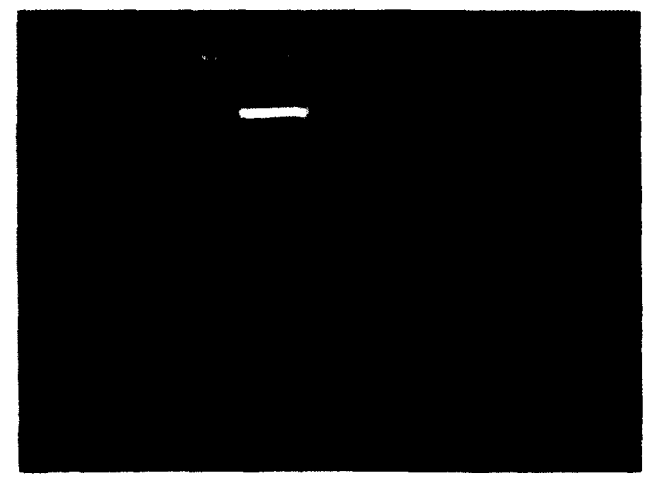
Percentage availability vs. link clusterdesignation for the following groups of frequencies: 11, 8, 6, and 4. The link cluster designation refers to thegrouping of stations which are allowed to participate.



Need to Move Spectrum Adaptively. Importance of Sporadic E during Disturbances. Drop Concept of Service Areas







Benefits of Managing HF Systems Using Real-Time Propagation Information

- Cost vs. Satellites. Don't have to replace ionosphere
- Spectrum Efficiency. Capacity and availability
- Synergy with satellites for very reliable services. Polar coverage. Scintillation and satellite impairments
- Competition

TCI Wireless Maritime Communications Services

- World-wide data and voice based on learned principles
  - ▶ Modest number of chirp transmitters and a Sufficient number of deployed chirp receivers reporting propagation information
  - ▶ Real-time ionospheric maps of ocean areas (Dynacast) to manage service
  - ▶ Dynacast to be made available to Government entities
- As good as and cheaper than satellite alternatives